KANSAS MEDICAL JOURNAL.

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ORIGINAL ARTICLES.

Physiology of Voice Production.

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A great variety of comparisons have been made between the human larynx and the different forms of artificially-constructed musical instruments. Perhaps the nearest likeness that we find is the reed instrument. While it lacks the most important modifying properties by which the characteristic quality of the human voice is produced, it possesses a similar mechanism to that which is the primary factor in the larynx.

We may say primarily the voice is produced by the imparting of the vibrations of the vocal cords to the column of air within the respitory organs, and the means by which this is accomplished is entirely analagous to that which is produced in reed instruments.

Sounds produced in the larynx, like other musical sounds, will vary in regard to their pitch, intensity and quality. The pitch of the sound will depend upon the length of the vocal cords; the shorter the cords, the more rapid are the vibrations and the higher the pitch of the note produced. The pitch of the note is further dependent upon the degree of the tension of the vocal ligament. As in the case of the string instrument, the pitch of the note is proportionate to the square root of the tension. In man and other animals the degree of tension is modified by the action of different muscles. The intensity of the sound depends primarily upon the strength of the blast of air, so that, therefore, the more vigorous the expiration the greater will be the amplitude of the vibration of the ligament and the greater will be the intensity of the sound. The timbre or quality of the vocal sounds, as in other instruments, depends upon the overtones which accompany the fundamental note. Changes in the shape of the different resonating cavities of the vocal organs will, by modifying the prominence of different overtones, alter the quality of the voice.

"We find that voice may be produced in all vertebrates which are possessed of lungs and larynges. In birds the vocal organs are double—a larynx situated at the upper termination of the trachea and a syrinx at its bifurcation, constituting a true vocal organ. The upper larynx is negative in voice production. At the syrinx two folds of mucous membrane project into the bronchus and are so acted upon by muscles as to vary their tension and adapt them to the production of voice. In song birds we find three membranes in each bronchus and five pairs of muscles. In addition to these muscles, which vary the tension of the vocal ligament, there are others which are concerned in varying the length of the trachea so as to alter the length of the vocal tube, and therefore the pitch of the tone produced." Here we find, then, that the pitch of the tone is modified not only by the length and the tension of the vibrating cords, but also, as in the reed instruments, by the length of the vocal tube.

We find also in man a muscular connection by which the larynx may be raised or lowered, thus altering the length of the vocal tube, and if unrestrained, the glottis occupies different positions with different tones. Thus we find it lowest in producing the low notes, and gradually rising as we

pass up the scale. This motion varies considerably in different singers, in some being very limited.

The pitch of the tone is also affected by the size of the vocal tube, and we find that the diameter of the tube is lessened by certain muscular contractions. In singing very high notes, we will notice not only that the vocal ligaments are closely approximated and very tense, but that the vestibule of the larynx—the space lying above the vocal ligaments and limited above by the epiglottis—is compressed by its constrictor muscles. The fauces are narrowed by the contraction of the constrictors of the pharynx and muscles of the soft palate. By experimentation with excised vocal organs, it is found that in order to produce a clear musical effect of the voice the membrane must be moist. Such, then, are the principal factors in the modification of sound and in the development of what is recognized as human voice.

Any impairment of these functions by disease or diverted action must necessarily affect the quality and range of the voice. In order that the most perfect results may be obtained, the muscles of the larynx and throat must be perfectly free and unrestrained in the performance of the functions for which they are especially adapted. One of the essential features in securing this condition is correct breathing. Diaphragmatic respiration is generally recognized to be the one which is most natural and which requires least effort. The respiration best adapted to the use of singers and speakers is one which furnishes the largest air capacity and at the same time least involves the auxiliary muscles of the neck and chest. In diaphragmatic respiration we find both these conditions fulfilled, since the greater air capacity is in the lower lobes and the lower intercostal and abdominal muscles are the ones principally involved. In our consideration of the voice and its relation to diseases of the upper air tract, the respiratory movement is not of so great importance as the method by which the column of air which passes the glottis is controlled. In doing very violent exercise, as, for instance, lifting a very heavy weight, a deep inspiration is taken, held in the lung as long as possible and then suddenly expelled, and on observing carefully we find the air is held at the larynx. The strength of the vocal ligaments alone is not sufficient to restrain the expansive force of a large column of air, and in action, which we have just referred to, we find the closure of the vocal ligaments is re-enforced by a closure or approximation of the ventricular bands and narrowing of the vestibule by a constriction of its muscles. This is not the natural condition of the healthy larynx in voice production, and it is only in the highest registers that we find any great tension of these muscles. This muscular tension is not consistent with the muscle freedom so essential to a good voice, and in order that the best results may be obtained, some other means by which the breath may be controlled during a prolonged or continuous exercise of the voice is necessary. In ordinary tranquil breathing, expiration is really a passive movement, but in the effort of speaking or singing expiration is assisted by the action of the abdominal muscles and the internal intercostals. By taking a full breath and directing your attention to the action of the diaphragm and abdominal muscles, you will find you are able to hold the breath as completely after a little practice and for as long a time as by closing the glottis, and you will also notice that the effort and tenseness at the larynx does not exist. By governing the action of the diaphragm and abdominal muscles, the breath may be easily and completely controlled, thus leaving the laryngeal muscles free and unrestrained in their action; and we claim for this method that it allows an increased range of vocal sounds, does not produce congestion of the throat from over action and improves the quality of the voice. As we have already said, the timbre or quality of the voice depends upon the size, shape and condition of the resonating chambers, *i. e.*, the mouth, throat and nasal cavities, and it is absolutely essential that a healthy condition be maintained in these parts. The quality of the voice is most noticeably affected by enlarged tonsils

or obstruction in the nasal cavities, but probably the condition which interferes most with the exercise of the voice is chronic pharyngitis. The quality is changed, phonation is frequently painful and the vocal organs are readily fatigued. This is a condition very common among speakers and singers, and we have some reason to believe that in them it is in a manner due to improper use of the vocal organs. In public speakers, especially out-door speakers, where great intensity of the voice is maintained a long time, we would expect to find as a result some indication of strain upon the vocal ligaments; so also in singers, who spend a great deal of time in exercise of the voice, we would expect the same condition, but we can see no cause for the effect produced in the pharyngeal membrane except through the additional muscular effort of the pharyngeal and faucial muscles in the effort to control the breath at the larynx. In these cases, coming to us on account of deficient vocal capacity, complaining of huskiness, fatigue and other conditions most readily ascribed to a disease of the vocal cords, we find these ligaments showing no evidence of disease, but we do find the ventricular bands and the pharyngeal wall red and congested, and if the trouble be of long standing all the evidence of chronic pharyngitis. Our first inclination is to enforce rest from the usual vocal effort and to apply such remedial agents as seem best suited to allay the inflammation, and if we secure the co-operation of the patient for a sufficient length of time, usually succeed in restoring the membrane to its normal condition. A recurrence of the inflammatory process, however, is most sure to follow a resumption of his former efforts by the patient. If this condition of the pharynx be a result of the unnatural muscular effort in the control of the breath, as we have already assumed that it is, then it would seem that the most reasonable plan for restoration of the natural function of these organs is the application, by a course of training, of the physiological laws of respiration to breath control. Teach your patient, by constant practice, to hold his breath while speaking or singing by means of the abdominal and lower intercostal muscles, and you will have accomplished what time and treatment may have failed to bring about.

The results of this method have been thoroughly and successfully demonstrated. It is as important that the laryngologists and ophthalmologists observe the physiological laws governing the functions of the organs we propose to treat as that the general practitioner forever keep in mind the processes of nature in the cure of disease.

The Use of Sulphur in Surgery.

In diseases of bones and joints, especially of tubercular character, W. Arbuthnot Laner, F.R.C.S., removes the diseased bone and synovial membranes and then rubs in sterilized sulphur. With regard to the action of sulphur he concludes:

I. It appears to exert no deleterious influence upon the health of the individual.

2. It gives rise to products which are powerfully caustic in their action, and must consequently be used in small quantities and with discretion.

3. It destroys all organisms, whether free in a cavity or growing in the surrounding tissues.

4. It acts much more powerfully upon recently-incised structures than upon granulating surfaces.

5. Its action is rendered more uniform and general and less violent by mixing it with glycerine.

6. If it be necessary to use a considerable quantity of the drug it must be removed within a few days. Irrigation with dilute perchloride of mercury lotion has proved very useful in the removal of small sloughs, etc., after the sulphur has been evacuated and the structures scraped.—*Medical Week.*

MEDICINE marks the progress of civilization.—QUAYLE.

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Topeka, Kansas, Saturday, March 24, 1894.

Welcome.

New doctor, we welcome you into the profession; a profession, we hope, you will always be proud of and help to make better. In receiving the degree you said publicly and voluntarily that you assumed the duties and responsibilities of the calling. You are now placed on an equal footing with any man in the profession. Your possibilities are equal to his in every respect. With these possibilities your responsibilities will increase from day to day. The eyes of the profession and of the public are on you. Your actions are watched and are open to criticism. You have nothing to fear if you have clean hands and a pure heart. Right motives are the foundation stones, and with such a foundation you will have no difficulty in wending your way through your medical life. I do not mean that you will be free from annoyance and disappointment. The physician who meets with neither of these is not worthy the name. He will soon die of ennui. These difficulties are to strengthen him by the exercise in overcoming them. These are all petty, trivial, compared with the difficulties born of lying and deceit. These cannot be overcome. The more you "bluff a lie," the bigger it becomes. It grows on explanations. Deceit is its true tissue food. The young doctor, who goes out in life with a view of "cheeking it through," has missed his calling. He may deceive the public for a while, especially where he can hide himself away in a large city, but he lives in continual fear, if he is an intelligent man, and sooner or later he meets his just deserts. There are too many honorable, conscientious, intelligent physicians to-day to detect wrong; and the people always have confidence in the man with whom they have to do and who has never deceived them.

Do right, then, because it is right. That being the motto, the incentive, the ideal culmination of life, there is nothing to fear and you know all will be well. Coupled with this and a necessary outgrowth of it is knowledge. A man may desire to do right in medicine, but ignorance will permit him to do wrong, and willful ignorance — not knowing — when it is in his power to know is not excusable or to be tolerated. Continuous study and research, then, is a sequella of right motive. Another sequella is to have a place of business — an office where you can be found. Keep it clean and the person clean. Fine clothes are all right if you can afford them, but they are not essential; but a clean wardrobe is essential. Promptness in attending to all promised calls is another element of success. If you cannot go or are in doubt, give the patient the benefit of the doubt by not promising. "A still tongue makes a wise head"; this applies only to your private business and your patient's bodily condition. Many things that the patient's friends may say about the case publicly you must not say. Speak the essential things to the patient, or his next friend or attendant, and speak

to the public about the case, if questioned, in a general way. In fact, the least said so as not to appear churlish the better for all concerned. Enlighten yourself on the topics of the day. Take a good daily paper and read it. Take two or three good medical journals. Do your share quietly in the community socially, politically and religiously. Do not go about seeking place, but if urged upon you and you feel capable, and you do not feel from your newness in the locality that it would be aggressive on your part, accept the trust and study to do it thoroughly.

When your professional work is done, have a fair understanding as to the compensation and the time of payment. Have no strikers —that is, persons working for you quietly with an understanding that you are to treat them free or divide the profits. If you feel professionally weak and incompetent, hire strikers. If you are meritorious, you will succeed; and if not, strikers will not save you.

Again we extend the right hand of fellowship to you, asking you to report any interesting case to us or ask questions, and we will get somebody to answer you. And hoping everything for your good may occur, the KANSAS MEDICAL JOURNAL bids you welcome.

Tri-State Society.

The Tri-State Medical Society will meet in Kansas City, Tuesday and Wednesday, April 3d and 4th.

A very interesting program has been prepared, and the three states of Missouri, Illinois and Iowa are well represented. All members of the regular profession are invited to attend and participate.

DR. WM. F. WAUGH, formerly of Philadelphia, has moved to Chicago and has accepted a professorship in the Post-Graduate School.

The Convention.

The convention of physicians, to be held in Topeka about May 1st, has become a certainty. The call will be issued and we hope every county will be represented. Every one who feels interested in better regulations of the practice of medicine and a higher standard of education should be on hand. There are to be no political schemes and no wire pullings for individual interests. The needs of the profession must be superior to personal feelings, factional quarrels and political ambition. We must work together with a single purpose and undivided interest. We need have no fear of popular disfavor. Once it is understood that our profession is alive to its own interest and demanding higher qualifications for admission to its ranks the popular favor will be with us.

THE KANSAS MEDICAL JOURNAL (Topeka) weekly, is much to our liking, and is a welcome weekly visitor. Considering the size and style, it is the cheapest journal in the field—$1 a year.—*Eureka Springs Medical Journal.*

The editor of the *Eureka Springs Medical Journal* knows a good thing when he sees it. It is not often that a first-class weekly journal can be had for $1 per year, and we are not making any promises for the next year's subscription price.

Notice.

There will be a meeting of the alumni of the Kansas Medical College in the main lecture room of the College building at 10 A.M., March 29, 1894. The recent graduates are requested to be present.

J. L. GILBERT, M.D.,
President.
F. H. BATTEY, M.D.,
Secretary.

Commencements.

This week and particularly this month is noted for the large number of medical college commencements. It is a trying month on medical students. Those applying for the degree and for advancement are equally exorcised Failure with some in either class means quitting; with others, a change of school. It is much better, in the event of failure, to continue in the same school, unless there is marked wrong done, which is not the case once in ten thousand times. In doing so, the first real object or difficulty in the way is overcome. Every battle won strengthens the student and begets in him self-confidence. He is a stronger and better man for the effort, and he will succeed. It is reported of Dr. Flint, the physiologist, that he was "plucked" in Louisville, and that he declared that he would yet teach these same teachers, which he has. It is so with every student who fails at first, if he is worth belonging to the profession, that he will gather and bound into the ranks, and make his mark. It may not be a big mark, but a legible one; it will be seen plainly and the profession and the world will be better for his existence.

LIGHTNING OPERATING is again being advertised. The latest report is from Kansas City. Ovariotomy and hysterorraphy in five and three-fourths minutes. The operator prefaced the operation by stating his intention to "break the record". The ultimate result of the operation is not given.—*Chicago Medical Recorder.*

DR. H. A. DYKES, the secretary of the State Board of Health, has several hundred letters from physicians all over the state expressing a desire for better medical legislation. These letters will be embodied in his report, and will make a grand appeal to the next legislature.

Private and Public Wells.

People who are accustomed to drinking well water do not readily bring themselves to liking the warm insipid river water supplied by the hydrant. Many people in our cities much prefer to drink well water, even at quite an inconvenience. That the custom is very unwholesome no one can deny, if they will but stop to consider the possibilities of pollution that exist in a city of 40,000 people. The water furnished by the city water supply, if properly exposed to the air in a settling reservoir, is much freer from animal matter and less likely to carry disease germs than well water, even from the newer districts. The dangers from using well water should be explained to the people and such wells as are not properly situated in relation to cess-pools, drains and stables should be condemned and filled up. There are wells existing and in use in some of the oldest and most thickly-inhabited portions of our city, which, though they are, in all probability, polluted by the sewage of the whole neighborhood, they are considered by their owners perfectly harmless and are greatly preferred to the clay-colored water of the Kaw.

Even our city fathers have fallen in with the popular idea and ordered a new curbing for the old street well on the avenue. Possibly it is their opinion that well water, like good whisky, ripens with age. We will admit that often it does assume a richer color and sometimes even shows a bead, but we had always imagined the color was due to drainage from stables and the bead was hydrogen sulphide from decomposing guests of the feline species. If an aureate hue, a mephitic odor and a phosphorescent glow add that peculiar quality to old water which we recognize as the bouquet of good wine, we must confess our taste lacks cultivation.

SEND in your subscriptions.

Esthetics of Consultation.

In considering this subject the first interrogation point is, Who shall we meet? Answer: Any physician who is a gentleman. Should I meet a homeopath? An eclectic? Yes, unless I am afraid of them morally or intellectually. What good will it do? Their ideas are altogether different from mine. I do not believe in the infinitesimal dose and many other points of difference could be mentioned. First, we remark that truth is no respector of schools or creeds. "Truth is that which is." Second, the public recognize different schools in medicine because the alopaths have compelled it to. Third, I am not an alopath, an eclectic, nor a homeopath. I am a physician. If these ismatic fellows are wrong (which I think they are) in putting such a handle to the name of physician or doctor, legislating against them will keep them alive. The way to do away with a wrong in the public mind is by doing right, not by talking it alone. I believe there is a larger per cent. of ignorant men who put the annex alopath, eclectic and homeopath to the name of doctor than intelligent men. This ignorance is not *per se*, but borne of wrong education, hatred and prejudice. If we are right, those of us who say we are physicians alone, the so-called regular profession, let us show by our actions who is in the wrong; be the leaders and instruct the others by demonstrating to them and the people the truth.

Where can the truthfulness or the falsity be demonstrated? At the bedside. It cannot be established by talk and by hospital reports. If the man is an impostor, clearly and kindly show him up. If I am the ignoramus, let me be shown up. The intelligent physician, who is going about with the prefix or annex to his name, is laboring under a mistake, in my judgment, and is capable of seeing his error if pointed out, and correcting it. The etiology, diagnosis, prognosis and pathology is the same with all physicians, and the point of difference is the therapy. I said I would meet those who were gentlemen (by gentlemen we include both sexes), using my own judgment in selecting the man. Meet him at the bedside, examine the case for myself, give the diagnosis if I could, outline the plan of treatment, and let the other fellow do the same in the presence of the patient or his friends and then if we could not agree, let the patient take his choice.

The "similia similibus curanter" statement is no more of a dogma, so far as I know, than the statement.

They are only theories, and I am willing to let the other fellow have his theory the same as his religion, if he will let me have mine. We invite kindly criticism on our views here expressed, and if we are wrong will gladly "fess up" and stand corrected.

Commencement Exercises of the Kansas Medical College.

The commencement exercises of the Kansas Medical College will be held at Library Hall, Wednesday evening, March 28th.

The public address will be delivered by Gen. J. C. Caldwell and the faculty address by R. E. McVey, M.D.

After the commencement exercises a complimentary banquet will be given to the students and alumni by the faculty.

Everything is being done that may add to the evening's entertainment and ensure a royal good time for the new doctors.

His First Case.

A young doctor attending his first case of labor was very much frightened when the membranes ruptured and the waters gushed out, and while looking in utter astonishment at the placenta, the husband said:

"Doctor, do you think she will did?"

"Die? Of course she'll die. Don't you see her bladder's busted and her liver dropped out?"—*Hot Springs Medical Journal.*

Ergot in the Treatment of Periodical Neuralgias.

BY W. H. THOMSON, M.D.

From the Medical Record.

Having for a number of years relied upon ergot in the treatment of migraine, I was led to try it also in cases of neuralgias which were marked by the feature of periodicity, with results of which the following reports are illustrations:

CASE I. My friend, Dr. T——, a practising physician of this city, furnishes me with these notes of his own case. He writes: "During the winter of 1883-84 I was troubled with frequent headaches. The attacks grew more and more frequent until they assumed a periodical character, coming on daily at 6 P.M. This condition increased, until, in the early spring of 1884, they became intolerable and necessitated my staying in bed. Under the impression that the trouble was malarial, I had taken quinine and arsenic, together with bromides, without relief. When I took my bed I took thirty grains of quinine daily for three days, in doses of fifteen grains night and morning, combined with capsicum; also fifteen grains of bromide of potassium every two hours. During these three days I also took two twenty-grain doses of chloral. All this was attended with no relief, the pain beginning with an occipito-cervical aching and then increasing until the whole head was affected. On the evening of the third day you called and prescribed one-dram doses of fluid extract of ergot, to be repeated every two hours until relieved. Your prescription was:

℞

Extract ergotæ fluid .....
Elixir cinchonæ .....aa..ʒ j

M. Sig.: Two teaspoonfuls in water every two hours, unless pain was relieved, when the intervals might be lengthened.

You stated at the time that it was a mistake to take large doses of quinine for periodical neuralgias, and directed me in the future to take but ten grains a day at 4 P.M. In an hour after taking the first dose of your prescription I went to sleep, which was the first sleep I had had in three days, and this ergot treatment made my recovery rapid. I must add that my headache was attended with no chill or rise of temperature. Several times since 1884 I have been threatened with similar attacks, but have always been immediately relieved by your ergot treatment."

CASE II. Mr. B—— I saw in consultation with Dr. A. E. Carpenter, of Boonton, N. J., who sends me the following account: "Mr. B——'s was a case of remarkably severe periodical neuralgia, following a mild attack of la grippe. It affected the intercostals and also the great sciatic of the left side. The attacks came on about 10 P.M. every night, and were almost entirely uncontrollable. I had prescribed large doses of quinine and of other antiperiodics without any satisfactory results. I even anticipated the attacks upon two occasions with half a grain of morphia hypodermically, but the same dose was required again before midnight. After becoming thoroughly alarmed about him, as you know, I invited you to see the case with me. It was the day after the patient had had the worst night of all. You ordered full doses of ergot in connection with moderate doses of quinine. That night the patient did not suffer at all, and had the best night which he had passed for a week. I continued your treatment for five days, and the patient made a speedy and permanent recovery. I found no necessity to give him any more morphia after beginning the ergot. The case had been of ten days' duration prior to your visit, and each succeeding night its severity was progressive."

CASE III. Mr. W——, a German druggist, living in Greenport, L. I., came, September 4, 1893, with a story of persistent daily headaches, lasting all day, but subsiding at night, beginning at the occiput and extending anteriorly. They first came on in the summer of 1892 and lasted through the autumn, but left him in the winter. In June, 1893, they returned worse than ever, and continued to date. Ever since they began in 1892 he became much constipated, though he was never so before, and his con-

stipation continued through the winter, when he was free from headaches. He had faithfully tried quinine and Warburg's tincture in very free doses without any relief. Pulse at his first visit, 110. Ordered to try four grains of exalgine at a dose, and if this did not relieve him, then to take a dram of ext. ergot fl. with elix. cinchonæ. On September 11th he reported that the exalgine gave him no relief, but the ergot, though it nauseated him, relieved him at once. He took the ergot from September 4th to September 8th, after which he has had no return of the headaches.

CASE IV. I saw, in consultation with Dr. L. Feigenblatt, of this city, Mr. W——, a young gentleman much given to horseback riding. Began to suffer from headaches, beginning at the occiput and then extending to the temples, which came on about 11 A.M. daily and gradually grew worse till they reached their acme about 4 P.M., after which they subsided in the night, without, however entirely disappearing. Dr. Feigenblatt failed to check their progressive severity till, on their becoming intolerable, he tried on one day thirty-grain doses of chloral with thirty of potassium bromide every two hours for two doses, with little more effect than causing a slight drowsiness. The next day, the patient becoming maniacal from pain, sixty-five grains of chloral, sixty of bromide and thirty of antipyrin were given within two hours. This dosing caused a profuse sweating and moderate sleep. The third day a consultant, who was called in, recommended that quinine and Warburg's tincture, which had been tried at the beginning of his treatment by Dr. Feigenblatt, should be resumed in large doses. Accordingly, sixty grains of quinine and two ounces of Warburg were administered in twenty-four hours, with even worse afternoon paroxysms of pain than before. The next day the bromide, antipyrin and chloral doses were resumed, as the patient had got some sleep from them, but as no permanent relief from the recurrence of the attacks was expected, I was asked to see him, which I did at 1:30 P.M., October 21, 1893. I found him in bed with a pulse of 106, eyes suffused, and with some photophobia. Temperature, 99° F. Complained of considerable dull occipital headache, and very apprehensive that it would soon come on in paroxysms. He had never complained of stiffness of the neck or of aching in the spine or limbs; his only other complaint was that he had been troubled for a number of weekswith a morning cough, for which he had consulted the above-mentioned gentlemen, who had seen him with his family physician for his headaches; but his cough persisted till his headaches came on, when it left him. Physical examination of his chest by me was with negative result. I advised his physician to begin at once with dram doses of ext. ergot fl. every hour, for three doses, with ten grains of quinine with the first two doses; and that if his stomach rejected either of the doses, that the ergot be given per rectum. I then requested the doctor to send me a report of the result. A week afterward the doctor wrote to me that with the first dose the patient experienced a good deal of relief; that he vomited the second dose, whereupon it was given by enema; and this was soon followed by complete subsidence of the headache, with profuse perspiration. This medication was repeated for three successive days, with final cure of the headaches, and what was also curious was that the second ten-grain dose of quinine, when given with the ergot, produced decided symptoms of cinchonism, whereas when it had been given singly in much larger doses before, it had failed to do so.

The severity of the pain in some cases of periodical neuralgias is remarkable. In one instance a gentleman, aged sixty-five, the type of a sturdy, self-reliant business man, became so overcome by a frontal neuralgia, with extreme photophobia and lachrymation, which came on about 10 A.M., that he could not help crying out from it like a child. In most instances, however, such neuralgias are of a dull, aching character, but frequently accompanied with great restlessness or marked depression. Thus a married lady once sent for me on account of what she described as an intolerable heavy aching coming on late every afternoon, in the

lower part of the back, with aching in both hips and down the inner aspect of the thighs, and accompanied with a profuse leucorrhœa, which would diminish in about four hours, when the aching went off. I gave her free doses of quinine and ginger, and that not succeeding, tried Warburg's capsules without effect; whereupon six grains of solid extract ergot, with three of quinine, were ordered every hour for three doses, commencing at 2 P.M. Both the aching and the leucorrhœa were checked on the first day of this treatment.

In the treatment of migraine with ergot it has been my practice to administer the fluid extract of ergot combined with an equal quantity of cinchona elixir, to obviate its tendency to cause nausea. Two teaspoonfuls of this mixture is to be taken in water as soon as the premonitory symptoms of the headache are noticed, and the patient is advised to lie down and keep very quiet. If after an hour the headache continues, a second similar dose is taken, and then a third in another hour if necessary. As nausea is such a general accompaniment of this affection, it is provided that if either of the doses be vomited it should then be taken as an enema in two ounces of water. I have rarely failed to arrest the attacks with this medication, even in long-standing cases, and with a preventative course of intestinal antiseptics in the intervals the relief from the malady has often proved permanent.

Bismuth Subgallate or Digestive Ferments?

The present *furore* in favor of bismuth subgallate is likely to prove its worst enemy, because its general use in all forms of indigestion will eventually create a reaction against it, causing it to fall into disuse. That the remedy is a useful one in certain forms of functional dyspepsia cannot be denied, but to be successful clinically the diet must be properly regulated, and with this latter precaution — although the writer has used the subgallate quite extensively during the past three months — the results have been but little, if any, more satisfactory than he has experienced from the same dose of bismuth subcarbonate.

Unfortunately, the profession has gotten into the habit of prescribing bismuth in the form of the subnitrate instead of the subcarbonate, and the favorable results following the employment of the latter are not appreciable when the former is given. The reason for this is obvious, since the subcarbonate is an amorphous powder, while the subnitrate is a crystalline substance, and no matter what may be the amount of the dose, it always enacts the role of an irritant. But even with the administration of the subcarbonate, and the rule is equally applicable in the case of subgallate, one or other of the digestive ferments should be added. In all cases the addition of either pepsin or pancreatin, or the simultaneous exhibition of malt extract, will materially enhance the bismuth effects, and we therefore submit this proposition to the profession in the firm belief that it will prevent much disappointment on the part of physicians and patients.

That bismuth preparations act as disinfectants in the alimentary canal is freely admitted, but that they stimulate or measurably improve the digestive function proper, there is room for serious doubt, and it would be well, therefore, in estimating the therapeutics of the remedy to take into consideration the physical demands of the patient. With our superior pepsin preparations and the elegant pancreatic extracts now at our command, it seems the part of wisdom to consider the ultimate effects of indiscriminately prescribing the popular remedy of the day.

To give the present article a practical turn, the following formulæ are suggested as a marked improvement over the use of bismuth alone in the treatment of dyspepsia and indigestion:

℞

Ext. nucis vomicæ.....gr. ¼
Pepsin pur.....gr. i
Bismuthi subcarbonas, vel
bismuthi subgallas....gr. iv

M. et fiat Tab. vel Chart. No. 1.

Sig.: Take one tablet or powder before and after eating.

℞

Ext. nucis vomicæ.....gr. ¼
Ext. pancreatini.....gr. iss
Bismuthi subcarbonas, vel
bismuthi subgallas....grs. iijss

M. et fiat Tab. vel Chart. No. 1.

Sig.: Take one tablet or powder before and one two hours after meals.

The first of these formulæ will be found available when the fault lies with the stomach; the second, when intestinal digestion is deficient. In the former case the diet should be regulated with a view to lessen the work demanded of the stomach; in the latter, the starchy food stuffs and fats must be diminished, the diet being principally of a nitrogenous character.—DR. JOHN AULDE in *American Therapist.*

Radical Cure of Inguinal Hernia by a New Method.

Dr. A. M. Phelps, in report of the New York Academy of Medicine, says: "In this new operation the incision is made from the lower end of the sac to at least two inches beyond the internal ring, and then the sac is turned upwards. The extension of the incision gives free access to the peritoneum and to the internal ring. After the sac has been turned upward, and two-thirds of it cut away, a needle armed with catgut is passed around the neck of the sac just as one would thread it around a purse in inserting a puckering string. The stump of the sac is then inverted into the abdominal cavity, which of course inverts the ligatures into the sac. The stump of the sac is now ligated so as to leave it in the abdominal cavity. One of the causes of relapse is the dimple left within the abdominal cavity at the internal ring. I have endeavored to avoid this by the manœuvre just described. The mouth of the sac is then closed by sutures, and finally the abdominal walls. The cord is taken from the canal and brought directly through the muscles. This description applies to the thin sacs; but in the somewhat thicker ones I take the needle and thread it around the sac longitudinally and draw it down so that the sac is puckered up and inverted into the abdominal cavity. I then transfix with a needle on either side and tie across the mouth of the sac. This method of treating the sac is applicable to those cases in which it can be easily puckered up to a mass about the size of a butter-nut or hen's egg. In dealing with a very thick, leathery sac, the intestine is returned to the abdominal cavity, and fastened upward to the inside of the abdominal wall by means of a catgut ligature passed through a second opening above. The inside of this sac is thoroughly scarified before being introduced into the abdominal cavity. Having closed the sac and internal ring, I put in between the transversalis fascia and transversalis muscle a number of loops of wire between the cord and the transversalis fascia. The cord is then brought forward through the muscle and the transversalis muscle is stitched together. Then another layer of loops of wire is introduced with the sutures at right-angles to the first sutures. Then the internal oblique is stitched and the cord brought directly through this muscle. If there is a large mass of fat in the abdominal parieties, it is better to pack this portion of the wound and allow it to heal by granulation. If, however, there is only a little fat it is better to close the wound and get primary union. These loops of wire are purposely roughened and they become encysted in the cellular tissue. I have some patients in whom these wires were introduced last spring, and still remain encysted without causing any trouble. One patient is going around with nearly five feet of silver wire in him. I have so far operated upon five cases, and have met with no suppuration.

"I now wish to exhibit a patient upon whom I operated by this method two months ago. He had an opening through which I could pass my hand. You will find in all

these cases a hard mass of fibrinous material at the site of operation, in which the wires are imbedded."

Silk-Worm Gut in Surgery.

Although silk-worm gut has been employed in surgery for some time, it is but recently that it has come into prominence. We trust, therefore, that our readers will be interested in the article on "Silk-worm Gut Making," on another page of this issue, which is contributed by a former resident of Iberia, who is thoroughly conversant with the details of its manufacture. The qualities which render silk-worm gut an excellent suture material, and to which attention was called by Dr. W. P. Carr (*N. Y. Med. Jour.*) as long ago as 1889, are that it is strong, less readily absorbed than other animal tissues, not injured by boiling or immersion in antiseptic solutions, capable of being tied in a firm knot, and more easily threaded and freer from kinks than silk, although less flexible. Dr. McGuire (*Virginia Medical Monthly*) gives the following method for its preparation: "The ragged ends of the strands are clipped, and the bunch put in a 1 per cent. alcoholic solution of methylin blue, where they should remain for twenty-four hours. This stains them a dark violet, and renders them more easily seen. They are then rinsed in water and soaked in a 1-1000 bichloride of mercury solution for twenty-four hours. They should be kept in absolute alcohol until needed." Great care should be exercised in the selection of the threads, and the small round ones should only be employed. Dr. Pearse (*Kansas City Medical Index*) cautions us against prolonged boiling, as it is apt to roughen and injure the thread. He considers silk-worm gut the ideal suture for closing a tear in the perineum or large gaping wounds in coarse yet vascular tissue, as the abdomen or thigh. According to Greig Smith (*American Text-Book of Surgery*), the danger of its breaking while being tied can be obviated by making the first knot a double one, and tying the second one very lightly or not at all. The frequent allusions to silk-worm gut in the more recent surgical literature demonstrate that anglers no longer enjoy the monopoly in its employment, and that it will grow in popularity as a suture material.—*Internat. Jour. of Surgery.*

Physicians in Japan.

A ex-attache writes: "Perhaps the most charming manner of compensating physicians for their care and attention is that which is customary among the natives of Japan. Physicians do not charge for their services, but, on the contrary, decline to name an amount, and protest against any idea of remuneration. Patients, on their side, are too proud to accept such services free, and send to the physician, not as a fee, but more as a friendship gift or token of gratitude, a sum of money, proportionate to the means of the giver, with some piece of silk, bronze or lacquer work, the idea being that medical attendance is by far too important and elevated a character to be desecrated by barter for filthy lucre." What a pity that our western civilization, with all its commonplace vulgarity and lack of delicacy, will not admit of the adoption of such a charming method of intercourse between the medical man and his client.—*The Medical Age.*

Say, rather, what a blessing that our western civilization with its sense of equality and justice, with its appreciation of actual merit, will not admit of such a system of dependence. There is nothing vulgar nor indelicate in physicians demanding a proper fee for service rendered. We have no more desire to go back to the oriental custom of remuneration than their standard of medical education.

Note on the Employment of Calcium Chloride as a Hæmostatic.

Saundby, in the *Birmingham Medical Review*, contributes a short note upon this subject, basing his experience upon the experimental report of Professor Wright. The three following cases are therefore of interest: The first of these was a middle-aged woman, with chronic jaundice of six months' duration, believed to be due to an impacted gall-stone. She suffered from pretty free hemorrhage from the rectum, apparently proceeding from some internal piles, but the bleeding was decidedly more than we should have expected from the state of the bowel. Our first efforts were directed to remove the hard fæces which could be felt in the rectum by the use of olive-oil injections, and to keep up a daily action of the bowels by the administration of saline aperients; but as after fifteen days these means failed to check the bleeding, calcium chloride in small doses was administered every four hours, with the satisfactory result that after five days the hemorrhage ceased and did not return. The next case was even more striking, as it was that of an elderly woman, admitted with purpura hemorrhagica—that is to say, she had a purpuric rash over the body and limbs, free bleeding from the gums, and slight hæmaturia. The free use of ergot, gallic acid and acid infusion of roses not having been followed by any benefit, on the third day after admission she was placed upon small doses of calcium chloride every two hours, after which the bleeding diminished, and five days later had ceased altogether, the patient making a good recovery. In the third case, which was one of phthisical hæmoptysis, calcium chloride was used in combination with other measures, but, in spite of all treatment, a profuse hemorrhage set in which carried off the patient. At the autopsy we found an aneurism of the pulmonary artery projecting into a cavity, a condition which sufficiently explained the futility of our remedies. With respect to dose, it is noteworthy that Professor Wright found, after giving one gram thrice daily for four days, that the coagulability became enormously diminished—*i. e.*, to over one hour—and on certain experiments upon himself he believes this was due to the administration of calcium chloride having been carried too far, for he found that when too large a dose of the salt was added to decalcified blood *in nitro*, coagulability decreased, and on taking two grams of calcium chloride three times a day the coagulability of his blood rose during the first twenty-four hours, returned to normal during the second, and in the third fell below normal, so that the best result may be looked for from comparatively small doses. In the author's cases the drug was administered in the form of the liquor calcii chloridi of the new British Pharmacopœia, which is of the strength of one to five, and the dose employed never exceeded thirty minims, or six grains, though in the case of purpura this quantity was given every two hours during the day for some days.—*Medical Record.*

The Removal of Gunpowder Stains.

Under a similar title in the *New York Medical Journal* of March 3, 1894, Dr. W. M. Nelson describes a new method of Dr. Ohmann-Dumesnil's for removing the tattooing produced by explosions of gunpowder.

The process consists of tattooing the affected surface with a glycerole of papoid, and was first described by Dr. Ohmann-Dumesnil in May, 1893, but was not applied to gunpowder stains. The case cited by the author was one in which the papoid was applied soon after injury was received; and it would be interesting to know if the same process would apply to cases in which the pigmentation had been of long standing. This, the author seems confident, would yield as readily to the treatment. He states, in conclusion, that "the treatment is an emperical one, and I cannot explain or describe what takes place after the introduction of the papoid.

"Dr. Ohmann-Dumesnil's statement that the papoid is disseminated about the deposit of pigment and liberates it (this liberation, I suppose, is brought about by the digestion of the albuminous envelopes of the carbon particles), that a portion in a finely divided state is absorbed by the lymphatics, and the rest finds its way to the upper layers of the skin, thence to the surface, is a plausible, but not altogether satisfactory, one."—*Times and Register.*

Iodated and Ferro-Iodated Cod-Liver Oil.

In *L'Union Medicale*, No. 55, 1893, the following formulæ are offered for the preparation of iodated preparations of cod-liver oil:

Iodine.....grs. xv
Triturate in the cold
with chloroform...gtts. xxx
Cod-liver oil.....℥ xxxjss

In color, taste and smell this preparation does not differ from ordinary cod-liver oil. It will not color starch.

Powdered iron.....2 parts
Iodine.....4 parts
Cod-liver oil.....40 parts

Triturate it all together in a mortar, adding a little ether until the iodine has disappeared, leaving a black product. This is then diluted, little by little, with cod-liver oil, until one thousand parts are obtained. Then filter. The resultant solution is a brownish-red liquid, which contains five parts to the thousand of the iodide of iron.—*Cin. Lancet-Clinic.*

WILLIAM R. JENKINS, of New York, is about to publish a work entitled "The Foot of the Horse, by David Roberge. It is safe to predict that The Foot of the Horse will arouse great interest as it is written by one closely associated with Mr. Robert Bonner for 25 years in his study and practice of the art of horseshoeing. The work will be found entirely new and on a different plan from anything of the kind which has yet been presented inasmuch that Lameness and all diseases of the foot are traced to an unbalanced foot bone, and Mr. Roberge declares that all lamenesses and diseases may be prevented or cured by simply balancing the foot. The work will be fully illustrated, showing improved methods of shoeing horses, and it is claimed that they are so simple that any one endowed with ordinary intellect may readily perceive how accurately he might arrive at the precise source of trouble and make a correct diagnosis, thereby enabling him to prescribe a specific for each cure that presents itself.

This work has been the life study of Mr. Roberge. To it he has devoted everything for 45 years.

Treatment of Sciatica.

In persistent cases of sciatica, Dr. Wier Mitchell fixes the limb in splints with the hip and knee-joint slightly flexed. The limb should be bandaged from the toes to root of the thigh. This treatment is continued for three or four weeks. The dressing is changed every day and the joints moved a little.

Prevention of Tuberculosis.

Some physicians may not believe in the preventive treatment of consumption unless it is based on anti-bacterian therapeutics, but we are convinced that the best preventives are to keep the health up to a high standard which is maintained by wholesome food, temperate habits, clothing adapted to the seasons, sanitary surroundings, dry temperate climate, etc., etc.

When a tonic and reconstructive remedy is indicated, the Elixir Six Hypophosphites, manufactured by the Walker-Green Pharmaceutical Co., of Kansas City, Mo., has no superior.